

GUSHINA-SAVITSKAYA, S. N.

Decomposition of corrosion-inhibiting dextrose in glycol.
Some oxidative compositions. Recent and
present publications. It is a question of the
possibility of using a new method of
decomposition of dextrose in glycol.

GUSHCHINSKIY, N.

New grain milling enterprises in the Mongolian People's Republic.
Muk.-elev.prom.27 no.12:4-6 D '61. (MIRA 15:2)

1. Proizvodstvenno-tehnicheskoye upravleniye Gosudarstvennogo
komiteta zagotovok Soveta Ministrov SSSR.
(Mongolia—Flour mills)

USHAKOV, G.P.; GUSHCHO, D.A.; LAZURKIN, Yu.S.; KAZAKOV, V.S.

[Effect of the phase state of polyethylene during ir-radiation on the character of the net formed] Vliianie fazovogo sostoiania polietilena pri obluchenii na kharakter obrazuiushcheisia setki. In-t atomnoi energii AN SSSR, 1960. 19 p. (MIRA 17:1)

(Ethylene, Effect of radiation on)

GUSHCHO, S.V., inzh.

Unique bridge in Abidjan (Africa). Avt. dor. 24 no. 3:29-31 Mr
'61. (MIRA 14:5)
(Abidjan, Ivory Coast Republic--Bridges, Concrete)

S/190/60/002/010/011/026
B004/B054

AUTHORS: Ushakov, G. P., Gushcho, Yu. A., Lazurkin, Yu. S., and Kazakov, V. S.

TITLE: The Effect of the Phase Condition of Polyethylene During Irradiation Upon the Type of the Resulting Network

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 10, pp. 1512-1520

TEXT: The authors studied the dependence of radiation cross linking on the state of low-pressure polyethylene. Polyethylene samples were irradiated in thin-walled aluminum containers in the presence of helium in the reactor (dose 150 - 1625 Mrad). Crystalline samples were irradiated at 45 - 50°C, and amorphous, molten samples at 130-160°C. A table gives the change of the melting point caused by irradiation, the change of the vitrification temperature, and of the high-elasticity module E_{∞} . Fig. 1 shows E_{∞} as a function of temperature, Fig. 2 thermomechanical curves of the samples irradiated, Fig. 3 E_{∞} as a function of the irradiation dose, and Fig. 4 the nonmonotonous dependence of the melting point T_m .
Card 1/2

The Effect of the Phase Condition of Polyethylene S/190/60/002/010/011/026
During Irradiation Upon the Type of the Resulting B004/B054
Network

on the dose. The authors found that the crystallization properties of irradiated polyethylene strongly depend on its phase condition during irradiation. Irradiation in a molten state led to a fast drop of T_m and a decrease of the crystallization degree. On irradiation in a crystalline state, the authors first observed a slight drop of T_m , then a constant value, and then a slight increase. The crystallization degree decreased more slowly than on irradiation of melts. These effects are interpreted as different types of network in the amorphous and crystalline states. In the amorphous state, the network fixes the disordered state of chains. In crystalline samples, however, the cross links fix the local order of polymer chains. This effect corresponds to the effect of increase of T_m in rubbers when their chains are oriented. There are 4 figures, 1 table, and 18 references: 7 Soviet, 7 US, and 3 British. ✓

SUBMITTED: May 10, 1960

Card 2/2

S/844/62/000/000/090/129
D204/D307

AUTHORS: Ushakov, G. P., Lazurkin, Yu. S. and Gushcho, Yu. A.

TITLE: The nature of lattices formed when either crystalline or amorphous polyethylene is irradiated.

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimi. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 526-530

TEXT: The present study, which is a continuation of earlier work (Vysokomolekulyarnyye soyedineniya, 2, 1512 (1960)), was carried out to determine the effect of lattices formed when the amorphous or crystalline polyethylene (PE) is irradiated, on the physical and mechanical properties of the polymer after irradiation. Low- and high-pressure PE specimens were irradiated (up to 1625 Mrad), under He, in both amorphous (150 - 160°C) and crystalline (45 - 50°C) states. Crystalline specimens were then heated to 150°C and slowly cooled. Amorphous PE gave rise to 'a-lattices', whilst both a- and 'k-lattices' formed in crystalline irradiated samples. The modulus

Card 1/3

The nature of lattices ...

S/844/62/000/000/090/129
D204/D307

of elasticity (E) for k-lattices decreased with increasing dose of irradiation (increasing cross-linking), but this effect was considerably weaker than that observed for a-lattices; thus for network density corresponding to 12 - 13 C atoms between cross-linkages a-type PE was rubbery ($E \sim 230 \text{ kg/cm}^2$), whilst k-type PE was still rigid and crystalline ($E \sim 4800$). The m.p. of a-PE decreased almost linearly with the growing proportion of cross-linkages whilst the corresponding effect for k-PE was less pronounced and discontinuous. The degree of crystallinity was simultaneously lowered, slowly for the k-, and rapidly for the a-lattice specimens. The a-lattices are formed by the cross-linking of convoluted polymeric chains. When crystalline PE is irradiated, the cross-linkages for either between locally ordered parallel chains of similar trans-configuration, to give the hitherto unknown k-lattices, or between disordered nonparallel chains (in the amorphous regions) to give the a-lattice. As in the case of amorphous irradiated specimens, the lowered crystallinity of k-PE is due to the decreased inter-chain distance on cross-linking. The m.p. is lowered when such lattices are formed, owing to (a) decreased crystallizability

Card 2/3

The nature of lattices ...

S/844/62/000/000/090/129
D204/D307

and crystal size, and (b) decreased flexibility of the polymer
chains. There are 3 figures.

ASSOCIATION: Institut atomnoy energii AN SSSR (Institute of Atomic
Energy, AS USSR)

Card 3/3

L 17604-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) PC-4/Pz-4/
Feb/Pu-4 AS(mp)-2/ASD(m)-3 GG/MLK/HM
AM4022018 BOOK EXPLOITATION S/

Ushakov, G. P.; Gushcho, Yu. A.; Lazurkin, Yu. S.; Kasakov, V. S.

Effect of the phase state of polyethylene during irradiation on the character of the lattices being formed (Vliyaniye fazovogo sostoyaniya polistilena pri obluchenii na kharakter obrazuyushcheyssya setki) Moscow, 1960. 19 p. illus., biblio. 155 copies printed. (At head of title: Ordena Lenina Institut Atomnoy Energii im. I. V. Kurchatova AN SSSR)

TOPIC TAGS: Crystalline polymer, radiation chemistry, amorphous polymer, polyethylene

PURPOSE AND COVERAGE: Data concerning the influence of radiation "stitching" on the melting point of polyethylene crystals are contradictory; both a lowering with increasing dosage and practical constancy have been observed. This discrepancy may be due to the difference in temperatures at which irradiation has been performed. The lattice being formed may have a different character during irradiation in the crystalline state than during irradiation in the amorphous state, despite the approximately identical consistency, and may affect the melting point

Card 1/2

L 17604-65
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of the crystals differently. Clarification of this question is the purpose of the present study.

TABLE OF CONTENTS:

Introduction - -	7
Experimental part - -	4
a. Irradiation and testing of specimens - -	4
b. Results of measurements - -	5
Discussion of results - -	10
Conclusions - -	11
Literature - -	20

SUB CODE: CC, CC

SUBMITTED: 00

NR REF Sov: 007

OTHER: 010

Card 2/2

GOOLIKIN, G. A.

"Cyphocleonus tigrinus Panz, a Pest of the Insecticidal Camomiles, and the Bases for Its Control." Cand Agr Sci, Voronezh Agricultural Inst, Voronezh, 1954. (RZhBiol, No 7, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

YEFREMOV, Ivan Semenovich; GUSHCHO-MALKOV, Boris Petrovich; SHPOLYANSKIY,
M.N., red.; OTOCHEVA, M.A., red.izd-va; LELYUKHIN, A.A., tekhn.red.

[New method of measuring the tension of contact network wires]
Novyi metod izmerenija natiazhenija provodov kontaktnoi seti.
Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1959. 38 p.

(MIRA 13:12)

(Electric railroads--Wires and wiring)

YEFREMOV, I.S., doktor tekhn.nauk; GUSHCHO-MALKOV, B.P., inzh.

Nonstepping control system with a carbon controlling resistance.
Vest. elektroprom. 31 no.11:27-30 N '60. (MIRA 13:12)
(Street railways)

YEFREMOV, Ivan Semenovich, doktor tekhn. nauk, prof.; Kozhevnikov, Vadim Mikhaylovich, kand. tekhn. nauk; GUSCHCHIKOV, Boris Petrovich, kand. tekhn. nauk, red.

[Design and calculation of the mechanical equipment of trolleybuses; textbook for term and diploma projects for students specializing in "City electric transportation"] Proektirovanie i raschet mekhanicheskogo oborudovaniia trolleybusov posobie dlia kursovogo i diplomnogo proektirovaniia studentam spetsial'nosti "Gorodskoi elektricheskii transport." Moskva, Energ. in-t, 1964. 238 p. (MIRA 18:1)

KOCHARYAN, E.G.; GUSHCHYAN, Z.V.

New data on the biology of tomato fertilization [in Armenian with
summary in Russian]. Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 7 no.3:
93-98 Mr '54. (MLRA 9:8)
(Tomatoes) (Fertilization of plants)

.. GUSHCHYAN, Z.V.

Effect of a pollen mixture on the vitality of the progeny in cabbage.
Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 8 no.2:49-51 P '55. (MLRA 9:8)

1. Institut genetiki i selektsii rasteniy AN Arm. SSR.
(Cabbage) (Hybridization, Vegetable)

GUSHCHYAN, Z.V.

Effect of different pollination methods on the formation of
hereditary characters in the hybrid tomato generation. Izv. AN
Arm. SSR. Biol. nauki 12 no.9:73-80 S '59. (MIRA 12:12)
(Tomato breeding)

GUSHEV, K. N.

BULGARIA/Chemical Technology - Chemical Products and
Their Applications - Silicates. Glass.
Ceramics. Binders.

I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9014
Author : Gushev, K.N.
Inst :
Title : A New Formulation for the Manufacture of
Earthenware Fired at 1200°.
Orig Pub : Leka Promishlenost, 1956, 5, No 2, 18-20.

Abstract : A new formulation is proposed for application
in the production of floor slabs (in percent);
Pleven white clay, 50; quartz sand, 24; so-
sium feldspar, 22; dolomite, 4. The mass is
sintered at 1200°. The slabs meet the require-
ments of the standard in all respects. The for-
mula can also be applied in the production of
acid-resistant articles.

Card 1/1

GUSHIN, I.S.

"On nervous-humoral mechanism of anaphylactoid shock in white
rats."

Report submitted to the Intl. Symp. on ⁴histamine,
Warsaw, Poland 21-27 Sep 1962

GUSHKA, F.S., kand.tekhn.nauk

Increasing the uniformity of the roving in worsted spinning.
Nauch.-issl.trudy TSNIIshersti no.16:3-17 '61. (MIRA 16:11)

CR GUSHKIN, G. G.

8

Chemical composition, concentration, and pH of liquid inclusions in fluorite. G. G. Gushkin and P. L. Prikhod'ko, *Zapiski Vsesoyuz. Mineral. Obshchestva* (Mémo. sov. russe. mineral.) 81, 120 (1952). Dark-violet, bright-violet, and greenish colored zones of fluorite crystals are analyzed, and show (contaminated by small particles of kaolinite, quartz, pyrite, or hematite are not taken into account) slight contents of Na_2O , MgO , and H_2O as foreign materials, derived from gas-liquid inclusions in the mineral. Spectrochem. exams. of the contents of these inclusions confirmed this assumption. There is a distinct decrease of the amounts of included material from the dark-violet cores, to the greenish or pinkish peripheral parts of the fluorite crystals. While the cores have crystd. in contact with schists and limestones intermixed, the peripheral parts have grown in a purely calcareous facies. Microchem. exams. of the contents of the inclusions gave, e.g., 0.012 g. of a solid residue from extd. solns., with Cl^- 0.007, HCO_3^- 0.001, Na^+ 0.003, and Mg^{2+} 0.001 g. (Ca^{2+} and F^- from the dissolved crystals are not taken into account). The content of the solns. decreases from 11.0% (in the core zone) to 9.9% in the violet intermediate zone, and 5.7% in the greenish peripheral zone. While chlorides are enriched in the solns. of the core and intermediate stages, the greenish parts are enriched in carbonates (or bicarbonates) of Na and Ca . The pH values are for inclusions of the dark-violet core 7.0; for the violet intermediate zone 7.3; for the greenish zones 7.0. H_2O is driven out between 200 and 300°, with decrepitation and the principal wt. loss (0.16%), but from 400 to 800° no more changes of wt. are observed. W. Etel

1.1950

18356

S/122/61/000/003/009/013

D241/D305

AUTHORS: Zemskov, G.V., Candidate of Technical Sciences,
Docent, Smekh, Ye.V., Gushkin, L.K., and Khmelevs-
kaya, M. Ye., Engineers

TITLE: Ultrasonic cleaning of steel from scales

PERIODICAL: Vestnik mashinostroyeniya, no. 3, 1961, 59-61

TEXT: The authors carried out research on the effect of ultrasonics on cleaning steel wire after drawing and patenting as well as on clock files and ordinary files after their hardening in oil. Pickling was carried out in a stainless steel bath. The ultrasonic vibrations were produced by a valve generator of 2.5 KW and employing a band of frequencies of 18 - 50 Kc. Nickel and "permendure" (K50F2) magnetostrictive vibrators mounted below and on the side of the bath produced the vibrations. No effect of frequency variation on the speed of etching was observed. The wire was treated in bundles, whereas the files were etched in bunches. Use was made of the following media: Water, a solution of sulphuric

X

Card 1/5

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D241/D305

Ultrasonic cleaning of steel ...

and hydrochloric acids, their mixtures and solutions of culinary salt and alkalis. The relationship between the time of cleaning and the composition, concentration and temperature of solutions was established. The effect of the number of rows of wire in a bundle was also investigated. For comparison purposes experiments were carried out without the ultrasonics. Fig. 1 illustrates the relationship between the time of etching a patented wire in steel 70 and the concentration of acids. It can be seen from the graphs that the duration of etching is reduced by tens of times, and it reaches the minimum with a concentration that is lower than in normal etching. This allows a less frequent renewal of solutions. The effect of temperature is indicated graphically also. With lower concentrations of acids there is a greater effect of temperature on the speed of etching. The introduction of hydrochloric acid into the sulphuric acid solution increases the speed of pickling and produces a clearer metal surface. The most suitable solutions are the 10% sulphuric or hydrochloric acid with a content of 5% NaCl. The effect of screening due to the number of rows of wire in the bundles is also shown. If the article is preliminarily

Card 2/ 5

10156

Ultrasonic cleaning of steel ...

S/122/61/000/003/009/013
D241/D305

treated during 5-10 minutes in a solution of sulphuric or hydro-chloric acids and then cleaned by ultrasonics in water, the scales will be removed in 1 - 3 minutes which is a few times slower than in a solution of acid. Cleaning in water promotes rinsing of the etching solution. This can lead to a reduction of brittleness due to hydrogen. The mechanics of ultrasonic removal of scales is then described. There are 4 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

Card 3/5

GUSHKO, Ya.M.

Meteorological and hydrological observations for hygienic purposes.
Meteor. i gidrol. no.8:37-38 Ag '60. (MIRA 13:8)
(Baikal region--Meteorology--Observations)
(Climatology, Medical)

*11.680V*S/208/62/002/003/007/011
I040/I219

AUTHOR: Gushkok, V. M. (Kiev)

TITLE: Self-organizing systems and the abstract theory of automata

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 2, no. 3, 1962, 459-466

TEXT: The purpose is to show that it is possible to construct a sufficiently consistent theory of self-organizing systems. The degree of self-organization of a machine, defined as its capacity to improve its answers by improving the organization of its learning history, is evaluated quantitatively with the aid of the learning and examination entropies $H^Q(l)$ and $H^Q(ex)$ corresponding to a given partition Q , one for the probability distribution over sequences of learning problems and the other for the probability distribution over problems given to the machine when the learning stage is finished. For each class K of partitions which contains one and only one maximal element Q_0 , there are defined two characteristics for the self-organizing capacity of machine A .

$$s(A, K) = - \int_K \Delta H^Q(ex) d\phi(Q) \quad \text{and} \quad z(A, K) = \int_K \frac{\Delta H^Q(ex)}{\Delta H^Q(l)} d\phi(Q) \quad \text{where} \quad \Delta H^Q = H^Q - H^{Q_0}.$$

With the aid of quantities defining programming of the self-organizing process, there are also given quantitative characteristics for the self-teaching capacity of a machine.

SUBMITTED: January 24, 1962

Card 1/1

VB

LEBEDEV, N.N.; GUS'KOV, K.A.

Reactions involving α -oxides. Part 3: Kinetics of secondary reactions in the interaction between ethylene oxide and acetic acid. Kin. i kat. 4 no.4:581-588 Jl-Ag '63. (MIRA 16:11)

l. Moskovskiy khimiko-tehnologicheskiy institut imeni D.I.Mendelejeva.

Gushnevich, B. N.

3(5)

PHASE I BOOK EXPLOITATION

SOV/2219

RSPN. Glavnore upravleniye geologii i ekspromi nej
Geologiya i neftegazonnoe Vostochnyj Sibiri (Geology and Oil- and
Gas-bearing Possibilities of Eastern Siberia). Moscow, Gosgop-
tekhnizdat, 1959. 486 p. 1,650 copies printed.

Additional Sponsoring Agency: Vostochno-Sibirskiy neftegeologicheskiy
konserv.

No. 1. V. G. Yastil'yev; Executive Ed.: Ye. G. Perzhina; Tech. Ed.:
I. G. Pedotova.

PURPOSE: The book is intended for geologists interested in the
stratigraphy, lithology, tectonics, and the oil- and gas-bearing
possibilities of the Eastern Siberian Platform and Zabaykalye.

COVERAGE: This collection of articles contains materials on the stra-
tigraphic classification and lithologic characteristics of sediments
of the Cambrian system and of the so-called "ancient" beds devel-
oped along the northern slope of the Eastern Sayan Mountains and
the western littoral of lake Baykal. Extensive information on the
petrography and paleontology of these deposits is presented. A
number of articles deal with the tectonics of the southern part of
the Siberian Platform and its oil- and gas-bearing possibilities
and of the Baykal-type depressions. There are 10 tables, 74 figures,
and 4 charts. There are 205 Soviet references.

TABLE OF CONTENTS:

From the Editor

Kareev, I. P. Lithology - Stratigraphic and Geochemical Characteristics of Rocks of the Southern Part of the Siberian Platform	3
Yekhovskiy, N. A. Comparing the Stratigraphic Sections of the Early Paleozoic Series in the Southern Plains of the Siberian Platform	167
Zil'yukh, A. V. Lithologic Characteristics and the Outlook for Gas- and Oil-bearing Possibilities in the Kuznetsk Slate of the Lower Cambrian of the Southern Siberian Platform	249
Gorshkov, A. I. Facies of the Lower Cambrian Sediments in the Southern Part of the Siberian Platform	288
Il'yusova, Z. Kh. and L. A. Lysova. Spores in the Lower Cambrian Sediments of the Southern Part of the Siberian Platform	304
Martynov, I. P., G. G. Leksi, and V. S. Gal'gov. Fauna of the Lower and Middle Cambrian Period in the Southern Part of the Siberian Platform	312
Zagrituk, S. J., Ye. M. Per'kova, and Ye. M. Matishchikova. Oil- accumulating Properties of the East Siberian Cambrian Sediments	325
Kareev, V. G. Cambrian Sediments of the Middle Course of the Burya River	336
Kononov, A. I. New Data on the Tectonics of the Southeastern Part of the Siberian Platform	356
Zemarev, D. M. and V. V. Samsonov. Geological Structure and the Oil- and Gas-bearing Possibilities of the Selenginskaya Depression	435
Palaeontologic Places	489

AVAILABLE: Library of Congress
NW/Ad
8-20-59

VASIL'YEV, V.G.; GRACHEV, G.I.; NEVOLIN, N.V.; OZERSKAYA, M.L.; PODOBA, N.V. Prinimeli uchastie: ALEKSEYCHIK, S.N.; GUSHKOVICH, S.H.; DIKENSHTEYN, G.Kh.; DZVELAYA, M.F.; DRABKIN, I.Ye.; IVANOVA, M.N.; KAZARINOV, V.P.; KALININA, V.V.; KOZLENKO, S.P.; MEDVEDEV, V.Ya.; PUSTIL'NIKOV, M.R.; ROSTOVTSEV, N.N.; SKOBLIKOV, G.I.; STEPANOV, P.P.; TITOV, V.A.; FOTIADI, E.E.; CHIRVINSKAYA, M.V.; SHMAROVA, V.P.; GRATSIANOVA, O.P., red.; BEKMAN, Yu.K., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Manual for geophysicists in four volumes] Spravochnik geofizika v chetyrekh tomakh. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Vcl.1. [Stratigraphy, lithology, tectonics, and physical properties of rocks] Stratigrafika, litologija, tektonika i fizicheskie svoistva gornykh porod. Pod red. O.P. Gratsianovci. 1960. 636 p. (MIRA 14:1)
(Petroleum geology) (Gas, Natural--Geology)

GUSHLO, L.N.

Methods of analyzing and planning stockbreeding and feed supply.
Sbor.nauch.trud. Ivan.sel'khoz.inst. no.16:32-41 '58.

(MIRA 13:11)

1. Kafedra organizatsii sotsialisticheskikh sel'skokhozyaystvennykh
predpriyatiy Ivanovskogo sel'skokhozyaystvennogo instituta.
(Stock and stockbreeding) (Feeds)

GUSHLYA, Martem'yan Zakharovich; KRYUCHKOV, Vladimir Feofanovich; STROGANOV, L.P., inzhener, redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor

[Telephone operator's handbook] Posobie telefonistam. Moskva, Gos. transp. zhel-dor. izd-vo, 1957. 118 p. (MLRA 10:4)
(Telephone--Operators' manuals)
(Railroads--Communication systems)

MIKHAYLOV, L.L.; GUSHOV, A.I.; TITOV, V.G.

Combined transportation of oil and gas by pipelines. Neft.
khoz. 39 no.7:43-47 Jl '61. (MIRA 14:6)
(Pipelines)

PAGE 1 BOOK INFORMATION

SOV/2715

9/3/81
 Academy of Sci.
 Akademijskij Institut
 Elektrostaticheskij Generator: shomik staryj. Elektrostaticheskij Generator:
 Collection of Articles) Moscow, Atomizdat, 1959. 255 p. 4,100 copies
 printed.

Ed. (First page): A. K. Val'yanov; Academy of Sciences, USSR; Ed.: 2d. (Inside
 book): Z. D. Andreyevich; Tech. Ed.: N. A. Tsvetova.

SUMMARY: This collection of articles may be useful to scientists and engineers
 working with high-voltage electrostatic generators.

CONTENTS: The authors discuss the construction and operation of a number of generating negative hydrogen ions. They discuss the operation of accelerating tubes and present methods of stabilizing accelerator voltages. No permanent negative hydrogen ions. References appear at the end of some articles.

Korol', A. O., I. I. Krupnik, A. D. Tsiolkov and Yu. M. Potschil. Problem of Producing a Beam of Negative Hydrogen Ions by Overacceleration Positive

15
 ions in a Cathode Channel of a High-frequency Source

The authors discuss a negative hydrogen-ion source based on the production of a negative ion beam by overacceleration positive ions in a gas flowing through a cathode channel of a high-frequency source. They also derive expressions for the dependence of negative hydrogen ions on the current density. There are 11 references: 6 Soviet, 4 English and 1 German.

Perel'man, A. A. Testing of Accelerating Tubes of a 4 Mev Electrostatic

Accelerator Developed by FZI. All USSR

The author briefly discusses the construction of a number of accelerating tubes and describes testing of these tubes in a 4 Mev electrostatic accelerator. He also discusses the results of testing and present

possibility of producing a source of heavy negative ions and presents graphs showing variation of the transformation coefficient with temperature and ion energy. There are 7 references: 5 Soviet and 2 English.

Potapov, Yu. M., B. B. Shabotovskij and I. I. Gubarev. Generation of

32
 Negative Ions of Helium, Carbon, Oxygen and Positive Positive

Ions. Sov. Atom. Energet. 6, 1959, p. 100-103.

The author briefly discusses the construction of a number of accelerating tubes and describes testing of these tubes in a 4 Mev electrostatic accelerator. He also discusses the results of testing and present

possibility of producing a source of heavy negative ions and presents graphs showing variation of the transformation coefficient with temperature and ion energy. There are 7 references: 5 Soviet and 2 English.

Shabotovskij, B. B. Electrostatic Generator as an Injector for an Accelerator

16
 of high-energy particles for accelerators. He describes basic features

of these generators and considers the operation of separator ion sources. He also discusses control and supply circuits of ion sources and

high-voltage sources developed in the laboratory of I. I. Gubarev and

I. I. Potapov. There are no references.

Shabotovskij, B. B. Voltage Stabilization of a High-current Direct-acting

Accelerator

The author discusses the operation of a voltage stabilizer system

for a high-current accelerator. The system was developed and tested

in the laboratory of FZI. It is based on a voltage stabilizer consisting of compressed gases and various circuits such as resistors, diodes,

nitrogen and oxygen and mixtures of nitrogen and carbon dioxide (N₂O₂), carbon dioxide and sulfur hexafluoride. They describe the experimental setup, discuss the procedure used in testing and present experimental results. There are 12 references: 11 English and 1

PETROVA-ALEKSANDROVA, N.; PENEV, TS.; GUSHTEROV, G.

Some anatomic and microbiological studies on the retting of flax
(*Linum usitatissimum L.*) and hemp (*Cannabis sativa L.*).
Godishnik biol 56 no.1:67-81 '61-'62 [publ. '63].

GUSHTEROV, G.

"Bacterial Flora in the Root System (Free Nitrogen-Assimilable Bacteria) of the Kazanluk Rose."
p. 49, Izvestiia, Sofiya, Vol. 4, 1953

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

1900-1901, 1902-1903.

BULGARIA/General Division - Problems of Teaching.

A-7

Abs Jour : Ref Zhur - Biologiya, No 7, 10 April 1957, 25805

Author : Gushterov, Georgy K.
Inst. : -

Title : How we May Observe Certain Microorganisms

Orig Pub : Priroda i znanije, 1954, 7, No 6, 10-14

Abst : No abstract

Card 1/1

GUSHTEROV, Georgi K.

✓ The effect of ammonium sulfate on the growth and morphology of Azotobacter. Georgi K. Gushterov. *Zhurnal Sotsiskogo Univ. Biol.-Geol. Gruzii. Taki, Kniga 1-Bil. 49,*

21-42(1954/55)(Pub. 1956).—The test organisms were *A. agilis* and *A. chroococcum*, and both technically (I) and chemically pure (II) NH_4NO_3 were used, with or without added $\text{Ca}_3(\text{PO}_4)_2$. The addn. of I to soil in the ratio 1:20,000 or 1:10⁴ will reduce growth to about $\frac{1}{2}$ or $\frac{1}{4}$. Doses of 1:10³ will allow only a few colonies to grow, and doses of 1:400 will prevent growth. The tests with I can be run in the same manner as a penicillium assay. *Azotobacter* will grow only at a certain distance from the penicillium, and the intensity of the growth can easily be ascertained by the coloration of safran. If one does the expt. in soln., and adds 0.0006 g. I to 0.5 cc. medium, the organism will grow as usual, yet the pigmentation of the colony will show changes, and addn. of I in doses of 0.000025 g. only will stimulate growth. If 0.33% II is added to the nutrient medium, *A. agilis* will grow well but the cells will be morphologically different from the ones without the II; with 0.9% II it will not develop at all. *A. chroococcum* develops well at an addn. of 0.5% II; higher levels cause morphological changes, 1.4% II cuts down the growth appreciably, and (growth stops) at 1.8% II. If involute forms induced by II are seeded into media without II, the cells revert to normal shape, yet they can grow now in higher concn. of II, than the mother colony. Seeding of the involute forms in media with up to 0.5% II also results in a reversion to the normal form. *Werner Jacobson*

GUSHTEROV, G. K.

SCIENCE

Periodical: GODISHNIK Vol. 50, no. 1, 1955/56 (published 1957)

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preserved for a long time in dry-air condition. p. 317.

Monthly List of East European Accessions (EEAI), LC. Vol. 8, No. 2
February 1959, Unclass.

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Ja '60. (EEAI 10:1)

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(Microbiology) (Industry)

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biol 57 no.1:1-7 '62-'63 [publ. '64].

GUSHTYUK, Ye

CA

1ST AND 2ND ORDERS PRECENTES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

7

A rapid method for the analysis of leparite concentrates.
 N. A. Vinogradova and B. I. Gushtyuk, Zavodskaya Lab. 11, 223-6(1946).—The method proposed is rapid and gives sufficiently accurate results. It is based on the decompr. of leparite concentrate with HF and H_2SO_4 , removal of Fe, soln. in 20% H_2SO_4 , pptn. of hydrosilicates with NH_4 , and treatment of the filtered ppt. with $(CO_3)H_2$. The rare earth elements are sepd. completely from Ca in the NH_4OH filtrate and from Ch, Ta, and Ti in $(CO_3)H_2$ soln. No rare earth was detected in the Ca ppt. After the sepa. of the rare earth elements from the $(CO_3)H_2$ soln., Ch, Ta, Ti, and Fe are sepd. by pptg. with cupferron, and Al is detd. in the filtrate. Ch and Ta are sepd. from Ti and Fe by the tannin method. Ta is detd. colorimetrically with pyrogallol in $(CO_3)H_2$ soln. Ti is detd. by difference after the detn. of Fe and the sum of Ch and Ta. The alkali metals are detd. by the $CaCO_3 + NH_4Cl$ method. Six references. W. R. Henn

ABR-164 METALLURGICAL LITERATURE CLASSIFICATION

E-274 1946-1947

IRON LITERATURE

TITANIUM METALS

TITANIUM METALS

LEPROD 44

LEPROD 44

LEPROD 44

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Effect of hemp articles, preserved by β -naphthol, on
various microorganisms. Godishnik biol 57 no.1:41-48
'62-'63 [publ. '64].

15(0)

SOV/119-53-11-9/15

AUTHORS:

Gushtyuk, Ye. I., Engineer, Zenov, S. P., Engineer

TITLE:

The Technology of the Production of Scales and Name-Plates
for Apparatus and Equipment Intended for Use Under Tropical
Conditions (Tekhnologiya izgotovleniya shkal i firmennykh
tablichek k priboram i oborudovaniyu, prednaznachennyu dlya
raboty v tropicheskikh usloviyakh)

PERIODICAL: Priborostroyeniye, 1958, Nr 11, pp 25-26 (USSR)

ABSTRACT:

The Tsentral'naya laboratoriya avtomatiki [TsLA] (Central Laboratory for Automation) developed a photochemical method with additional deep-etching for the purpose of producing relief-work name-plates etc. from brass. The basic surface is dyed black by the electro-chemical method. This method of production gave much better results than that recommended by the "EN MEP OIA 623002-55" regulations. The technological production process according to the data supplied by the Central Laboratory, is the following: The brass plate (0.5 mm thickness) is ground on both sides and polished on one side only. After the removal of grease, the plate is nickel-plated. The nickel-plated part is once more degreased, washed with water, and dried, after which the photo-sensitive emulsion is supplied. The latter consists of three separate solutions

Card 1/4

SOV/113-56-11-9/15

The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions

which are poured together and mixed before application.

Individual Solution I.:

25 ml of 25 % aqueous ammonia, 1 l of water, 170 g of scraped glue of the type "Kunze: 2". After a period of from 12 to 14 hours the swelled glue is boiled up.

Individual Solution II.:

25 % ammonia and rectified alcohol (40 ml)

Individual Solution III.:

25 g bichromate of ammonium, 2.5 g chrome alum, 4 g chromic anhydride, 200 ml of water.

These three solutions, after having been poured together into a vessel, (durability 4 - 5 days) are applied in two layers at a temperature of 55 - 40°C in intervals of 20 - 25 minutes. Drying in the air in a vertical position takes 2 - 3 hours. Application of the letters, development, fixation, etc. is carried out in the same manner as with deep-etching. The following fixing agent is used: 50 g bichromate of ammonium, 20 g chrome alum, 5 g rectified alcohol, 1000 ml of water. Time needed for fixing: 5 - 6 minutes. That side of the plate on which there is no writing is now coated with varnish of the

Card 2/4

SOV/119-58-11-9/15

The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions

type 9-32-~~TM~~TM MFP . 3219-52. Drying takes 10 - 20 minutes at a temperature of from 50 - 60°C. The nickel coating (specific weight: 1,64) is electrolytically removed. Anode: plate, cathode: lead. Terminal voltage 6 - 8 V. Current density: 8 - 9 A/dm². A nickel layer having a thickness of 5 - 6 μ is removed within 1 - 2 minutes. The plate is washed in water and is placed into the following electrolyte for deep-etching: 180 - 200 g chromic anhydride, 1 - 1,5 g sulfuric acid, 1000 ml of water. Anode: plate. Cathode: nickel. Terminal voltage 6 - 8 V. Current density 1 - 1,5 A/dm². Time needed for etching: 20 - 60 minutes. After this operation the etched side of the plate is coated with varnish 9-32, the plate is cut to its required size, the necessary holes are drilled etc., and the protective coating is removed. If the basic surface is intended to remain yellow, the plate is coated with the varnish 9-32 ~~TM~~TM 473-56, which is suited for use in tropical climates. A black undercoating is produced electrolytically. Electrolyte: 160 - 180 g caustic potash, 3 - 4 g nitrate of sodium, 4 - 5 g KCl, and 1000 ml of water.

Card 3/4

SOV/119-58-11-9/15

The Technology of the Production of Scales and Name-Plates for Apparatus
and Equipment Intended for Use Under Tropical Conditions

Anode: plate. Cathode: steel. Current density 1 - 2 A/dm².
Temperature: 95 - 97°C. Time needed for working: 5 - 6 minutes.

ASSOCIATION: Tsentral'naya laboratoriya avtomatiki
(Central Laboratory for Automation)

Card 4/4

15(0)

AUTHORS:

~~Bushnyuk, Ye.~~ I. Engineer,
Zenov, S. P. Engineer

SOV/119-58-11-10/15

TITLE:

The Technology of the Production of Scales and Name-Plates
for Apparatus and Equipment Intended for Use Under Tropical
Conditions. II (Tekhnologiya izgotovleniya shkal i firmennyykh
tablichek k priboram i oborudovaniyu, prednaznachennym dlya
raboty v tropicheskikh usloviyakh)

PERIODICAL: Priborostroyeniye, 1958, Nr 11, pp 26-26 (USSR)

ABSTRACT: The Tsentral'naya laboratoriya avtomatiki (Central Laboratory
for Automatics) developed the following technology for the
production of large-sized metal scales and instrumental
dials: The metal name-plates are cleaned, phosphatized, and
provided with an undercoat of №3. On to the front part treated
in this manner, from 4 to 5 coatings of white enamel AC-81
are applied by means of a spray gun. Drying of each coating:
1 hour at 18-25°C and 1 hour at 110°C. On to the reverse
side of the plate enamel № 270 is applied. The metal signs
are stuck on to the enamelled part and are coated with
varnish 9-32F. For the photochemical production of the signs

Card 1/3

The Technology of the Production of Scales and SCOV/119-58-11-10/15
Name-Plates for Apparatus and Equipment Intended for Use Under Tropical
Conditions.II

an aluminum foil of 0,1 mm thickness must be used. This foil is placed into a 10% solution of caustic soda, after which it is washed again in water and the photo-sensitive film is applied in the manner described in part J of this abstract. Anodizing takes place in an electrolyte of sulfuric acid at a terminal voltage of 12-15 V. The current density is 1-1,5 A/dm². Cathode-nickel, anode plate. The temperature of the bath is below 20°C; time needed for anodization: 20-30 minutes. After anodization the plate is coated with a water-soluble paint which is stable to light. The subcoating is removed by dipping into a solution of 100 g iron chloride, 15 g copper chloride, and 100 ml water. Hereafter, the plate is again washed in water, and the varnish is removed by means of the solvent Nr 646. In order to produce black figures and signs, a brass foil of 0,1 mm thickness is used, to which the photosensitive film is applied. Further treatment is similar to that described in part I of the abstract. Etching off the undercoating is carried out in an iron chloride solution (specific weight 1,42). The foil of varnish is then removed.

Card 2/3

The Technology of the Production of Scales and SOV/119-58-11-10/15
Name-Plates for Apparatus and Equipment Intended for Use Under Tropical
Conditions. II

The image obtained on the brass foil is stuck on to the
scale.

ASSOCIATION: Tsentral'naya laboratoriya avtomatiki
(Central Laboratory for Automatics)

Card 3/3

GUSIC, BRANIMIR

GUSIC, Branimir; KRAJINA, Zvonko

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1. Otorinolaringolska klinika Medicinskog fakulteta u Zagrebu
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(Otitis, in inf. & child)

GUSIC, Branimir, Akademik

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paranasal sinuses, diag. & management (Ser))

GUSIC, BRANIMIR

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hypopharyngeal, surg.)
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(ESOPHAGUS, stenosis,
caustic)

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Beogr. 13 no.3-4:134-137 Mar-Apr 56.

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tympanoplasty (Ser))

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stojnik: prof. dr B. Gusic)

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GUSIKA T.L.

(G-1)

PHASE I EGG BLOCK . 104 867/5410

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Trudy (Proceedings of the Tashkent Conference on the Practical
Use of Atomic Energy) v. 2. Tashkent, Izd-vo Akad. Nauk. 1960.
41 p. Errata slip inserted. 1,500 copies printed.

Spec. Lang. Geogr: Akademika Akad. Nauk Uzb. SSR.

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Can 1/20

176

Transactions of the Tashkent (Cont.)

SOV/5410

Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babalkhanova.

PURPOSE : The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

COVERAGE: This collection of 133 articles represents the second volume of the Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

Card 2/20

176

Transactions of the Tashkent (Cont.) SOV/5410

Instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

RADIOACTIVE ISOTOPES AND NUCLEAR RADIATION
IN ENGINEERING AND GEOLOGY

Lobanov, Ye. M. [Institut yadernoy fiziki UzSSR - Institute of Nuclear Physics AS UzSSR]. Application of Radioactive Isotopes and Nuclear Radiation in Uzbekistan 7

Taksar, I. M., and V. A. Yanushkovskiy [Institut fiziki AN Latv SSR - Institute of Physics AS Latvian SSR]. Problems of the Typification of Automatic-Control Apparatus Based on the Use of Radioactive Isotopes 9

Card 3/20

• Transactions of the Tashkent (Cont.)	SOV/5410
• Abdullayev, A. A., A. P. Novikov, Ye. M. Lobanov, M. M. Romanov, and A. A. Khaydarov [Institute of Nuclear Physics AS USSR]. Determination of Indium Content in Sphalerites by the Method of Radioactive Analysis	203
• Lobanov, Ye. M., O. M. Romanov, M. M. Romanov, and A. A. Khaydarov. Determination of Copper and Manganese Content in Alvanyk Ore Deposits by the Method of Neutron Radioactive Analysis	208
• Alderman, A. F., <u>P. L. Gusika</u> , and D. K. Kaipov [Institute of Nuclear Physics KazSSR]. Application of Monte Carlo Method for the Investigation of Gamma-Quanta Passage Through a Substance	212
• Grunbikov, A. P., and G. S. Semenov [Institut geologii i raz- rabotki goryuchikh iskopayemykh AN SSSR - Institute of Geology and Production of Mineral Fuels AS USSR]. Radiometric Appara- tus Used in Prospecting for Oil and Gas	220

Card 11/20

S/707/60/003/000/009/013
B125/B102

AUTHORS: Akkerman, A. F., Gusika, P. L., Kaipov, D. K.

TITLE: γ -radiation applied to the detection of heavy element doping
in a medium with small atomic number

SOURCE: : Akademiya nauk Kazakhskoy SSR. Institut yadernoy fiziki.
Trudy. v. 3, 1960. Vzaimodeystviye vysokoenergichnykh chastits
s atomnymi yadrami, 124-130

TEXT: Possibilities are discussed of detecting heavy elements in ore-bearing rocks by a variant of the Monte Carlo method developed by the authors (Trudy Instituta yadernoy fiziki Akademii nauk Kazakhskoy SSR) for calculating the transmission of radiation through matter. 200 125-Mev γ -quanta ($E \approx 2.447 m_0 c^2$) incident perpendicularly on two types of specimen, 10 cm thick, composed of a homogeneous aluminum lead mixture, one with a lead content of 5 and the other with one of 10 percent in weight, were studied by the authors. In addition, a "selection" of the partner (i.e. of the aluminum or the lead atom) was introduced into the calculating scheme. The probability for interaction with the aluminum

Card 1/3

S/707/60/003/009/013

B125/B102

γ -radiation applied to the...

atoms in the mixture is given by $P = \sigma_{Al} \cdot N_{Al} / (\sigma_{Al} \cdot N_{Al} + \sigma_{Pb} \cdot N_{Pb})$, where σ_{Al} and σ_{Pb} are the total cross sections of the interactions with the aluminum and lead atoms; N_{Al} and N_{Pb} are the numbers of Al and Pb atoms per cm^3 of the mixture. The results of the calculations are shown with others in Fig. 3 and Fig. 5. Photoabsorption occurs practically only on lead. With increasing lead concentration, the maxima of photoabsorption are shifted toward higher energies. At the same time the whole energy distribution changes. The share of the heavy element in the mixture becomes noticeable in certain sections of the spectrum of both forward and backscattered radiation and can be determined experimentally. This confirms the ideas of selective core sampling by γ -rays. In the range of relatively high concentrations the method of selective core sampling is of low efficiency owing to the small difference of the spectra of scattered radiation at a lead content of 5 % and 10 %. With increasing concentration of the heavy element doping, selective core sampling passes to impervious core sampling. Selective core sampling by γ -rays can be employed if the lead doping is less than 5 %, impervious core sampling if it is more than 5 %. The

Card 2/6

γ -radiation applied to the...

S/707/60/003/000/009/013
B125/B102

percentage of dopings in ore-bearing rocks cannot be evaluated precisely since the data hitherto available are insufficient. The ore content could, however, be estimated from the ratio of intensities in a definite section of the spectrum and from the shift of the maximum of photoabsorption on the energy scale. The doping percentage can be evaluated by selective core sampling with the use of a luminescence spectrometer. Ye. Akkoshkarov and F. A. Tulinova are thanked for their assistance in carrying out the calculations. There are 7 figures, 1 table, and 5 references: 4 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: C. C. Horton Rep. A.E.R. ERS/L3, 1953.

Legend to Fig. 3: Energy spectra of photoabsorbed γ -quanta: 1 - Al + 5% Pb; 2 - Al + 10% Pb.

Legend to Fig. 5: Spectra of forward scattered γ -quanta for a mixture: 1 - Al + 5% Pb; 2 - Al + 10% Pb.

Card 3/6

S/057/61/031/007/008/021
B111/B2063.9600AUTHORS: Vulis, L. A. and Gusika, P. L.

TITLE: The "reversal" of effects in magnetohydrodynamics

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 7, 1961, 806-818

TEXT: The application of the "law of the reversal of effects" on steady quasi-unidimensional flows of a conductive gas which is affected by hydro- and electrodynamic factors, is discussed. This law was formulated by L. A. Vulis (Ref. 1: DAN SSSR, 54, 669, 1946; 56, 799, 1947) in the general for the unidimensional steady motion of a gas, and has the form

$$(M^2 - 1) \frac{d \ln z}{dx} = \sum_i \alpha_i^2 \frac{dw_i}{dx} \frac{d\Omega}{dx} \quad (1)$$
 where M is the Mach number, z the symbol for the rate of flow u, the mach number or a state parameter of the gas, x the direction of u, dw_i/dx the "effect", and $d\Omega/dx$ the sum of effects. By the "effects" dw_i/dx the authors mean cross sectional changes of the channel, changes of the outflow rate, or supply and removal of energy in the form of work, heat, and friction. Of special interest in magneto-

Card 1/4

S/057/61/031/007/008/021
B111/B206

The "reversal" of effects in ...

hydrodynamics is the effect of the electromagnetic field on the flow of the conductive gas. This effect is studied in two aspects. 1) The passage through the critical rate of propagation of disturbances in any dense moving medium is investigated by means of (1). 2) The dependence of the electric volume force (and dissipation) on the rate of flow is investigated. The passage through sound velocity and the application of the "Law of the reversal of effects" in magnetohydrodynamics was explained by G. S. Golitsyn and K. P. Stanyukovich (ZhETF, 33, 6 (12), 1417, 1957) for finite, but large electric conductivity, i.e., great Re_m . The same study was conducted by E. L. Reslera and W. R. Sears (ZAMP, 96, no. 5/6, 509, 1958; J. Aeron. Sci. 25, no. 4, 235, 1958) for small Re_m values. From the magnetohydrodynamic fundamental equations, the authors derive equation

$$(M^2 - 1) \frac{d \ln u}{dx} = \frac{d \ln F}{dx} + \frac{1}{a^2} \frac{d \tau}{dx} + \frac{1}{\rho a^2} [j \mu H]_x - \frac{1}{a^2} \left(\frac{d \sigma}{dx} + \frac{d \sigma_{rp}}{dx} \right) + \frac{1}{\rho c_p} \left(\frac{\partial \tau}{\partial T} \right)_p \left(\frac{d Q}{dx} + \frac{d Q_{rp}}{dx} + \frac{j^2}{\rho u a} \right). \quad (8)$$

Card 2/4

S/057/61/031/007/008/021
B111/B206

The "reversal" of effects in ...

for the reversal of effects, where F is the channel cross section, ψ the gravitational potential, L_T and Q_T the frictional energy and -heat, L the mechanical energy, Q the heat from other heat sources. In the next two paragraphs, first the electromagnetic effect and then the passage through the hydrodynamic sound velocity are isolated and studied in detail. For the general case of the passage through the total magnetohydrodynamic sound velocity,

$$(M^2 - 1) \frac{d \ln u}{dx} = \frac{1}{1 + \xi A^2} \left[\frac{d \ln F}{dx} - \frac{\gamma - 1}{a^2} \left(\frac{dQ}{dx} + \frac{J^2}{\rho u^2} \right) \right]. \quad (18)$$

holds for the "law of the reversal of effects", where $\tilde{M}^2 = M^2 / (1 + \xi A^2)$, $\tilde{M}^2 = 1 + A^2$, and for ξ holds $\xi = 1 / (1 - H'' / Re_m \cdot H')$ (20), $0 < \xi < 1$. The primed quantities in (20) signify the derivation according to $\tilde{x} = x/l$. A special case of this problem was dealt with by L. A. Vulis and K. P. Stanyukovich (Ref. 8: V sb. "Issledovaniye protsessov perenosu. Voprosy teorii otnositel'nosti" - ("Investigation of transfer processes, Problems of relativity theory"), vyp. 2. Trudy KazGU, Uchpedgiz, Alma-Ata,

Card 3/4

The "reversal" of effects in ...

S/057/61/031/007/008/021
B111/B206

1960) and K. P. Stanyukovich (Ref. 9: Neustanovivshiy esa dvizheniye sploshnoy sredy, GITTL, M., 1955) during the study of the gas loss of stars. The studies conducted by the authors showed that the "law of the reversal of effects" on quasi-unidimensional steady flows of a conductive gas can be applied for electromagnetic effects. In the general case, the reversal of the effects leads to a generalization of the mach number $M = u/\tilde{a}$, where \tilde{a} is the total sound velocity in magnetohydrodynamics; for $Re_m \gg 1$, $\tilde{a} = \sqrt{a^2 + V^2}$ holds and for $Re_m \leq 1$, $\tilde{a} \approx a$, so that in general \tilde{a}^2 becomes $\sqrt{a^2 + f V^2}$, where f is determined from (20). N. Ye. Zhukovskiy is mentioned. There are 3 figures, 2 tables, and 13 references: 10 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet im. S. M. Kirova, Alma Ata (Kazakh State University im. S. M. Kirov, Alma-Ata)

SUBMITTED: July 25, 1960

Card 4/4

26.2311S/057/61/031/007/009/021
B104/3206AUTHORS: Vulis, L. A. and Gusika, P. L.

TITLE: Hydro-gas-analogy in magnetohydrodynamics

PERIODICAL: Zhurnal tehnicheskoy fiziki, v. 31, no. 7, 1961, 819-823

TEXT: N. Ye. Zhukovskiy (Trudy TsAGI, no. 1, 1925) showed that the motion of an incompressible fluid in a closed channel is in many respects analogous to the isentropic motion of a compressible gas. It can be easily shown that this analogy is also kept up for the motion of conductive media during the effect of electromagnetic forces. The equations of motion for a plane isentropic flow of a compressible conductive gas, and those for a quasi-plane motion of a conductive liquid in closed channels are investigated. In the first part, the system

$$\frac{\partial \phi}{\partial t} + \frac{\partial (\rho u)}{\partial x} + \frac{\partial (\rho v)}{\partial y} = 0, \quad (1)$$

Card 1/6

Hydro-gas-analogy in ...

S/057/61/031/007/009/021
B104/B206

$$\left. \begin{aligned} \rho \frac{\partial u}{\partial t} + \rho u \frac{\partial u}{\partial x} + \rho v \frac{\partial u}{\partial y} &= - \frac{\partial p}{\partial x} + [j\mu H]_x + f_x, \\ \rho \frac{\partial v}{\partial t} + \rho u \frac{\partial v}{\partial x} + \rho v \frac{\partial v}{\partial y} &= - \frac{\partial p}{\partial y} + [j\mu H]_y + f_y, \end{aligned} \right\} \quad (2)$$

$$c_p T + \frac{V^2}{2} = c_p T_0. \quad (3)$$

is written down for the gas flow and in the second part, the system

$$\frac{\partial h}{\partial t} + \frac{\partial (hu)}{\partial x} + \frac{\partial (hv)}{\partial y} = 0, \quad (7)$$

$$\left. \begin{aligned} h \frac{\partial u}{\partial t} + hu \frac{\partial u}{\partial x} + hv \frac{\partial u}{\partial y} &= -gh \frac{\partial h}{\partial x} + [j\mu H]_x + f_x, \\ h \frac{\partial v}{\partial t} + hu \frac{\partial v}{\partial x} + hv \frac{\partial v}{\partial y} &= -gh \frac{\partial h}{\partial y} + [j\mu H]_y + f_y, \end{aligned} \right\} \quad (8)$$

Card 2/6

Hydro-gas-analogy in ...

S/057/61/031/007/009/021
B104/B206

$$h + \frac{V^2}{2g} = h_0. \quad (9)$$

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for a fluid flow with free surface. In both cases $[\mathbf{j}_0 \mathbf{H}]$ was considered, and from a comparison of the two systems it may be seen that they are analogous for $\gamma = 2$. The following analogues are compared: Mach number $M = V/a$ - Froude number $Fr = V/c$; density ratio ρ/ρ_0 - height ratio h/h_0 ; pressure ratio p/p_0 - ratio of the squares of the heights h^2/h_0^2 ; temperature ratio T/T_0 - height ratio $h:h_0$; Alfvén number $A = V_A/a$ - analogue of the Alfvén number $\bar{A} = V_A/c$. In the last ratio, $V_A = \sqrt{\mu H / \rho}$ denotes the velocity of the magnetoacoustic oscillations in a medium with infinite conductivity. These ratios form the basis for simulating flows of a conductive gas by means of the flows of a conductive liquid in a trough on application of electric and magnetic fields. For both cases the known relations $\mathbf{j} = \text{curl } \mathbf{H}$ and $\dot{\mathbf{j}} = \sigma(\mathbf{E} + [\mathbf{V} \mu \mathbf{H}])$ hold for the flow density vector and $\partial \mathbf{H} / \partial t = \text{curl} [\mathbf{V} \mathbf{H}] + \nu_m \nabla^2 \mathbf{H}$ for the correlation between magnetic field strength

Card 3/6

Hydro-gas-analogy in ...

S/057/61/031/007/009/021
B104/B206

and flow velocity. The completion of the initial equations by these two differential equations determines the conditions for electromagnetic simulating. The main criterium for both flows is the magnetic Reynolds number $Re_m = V_1/v_m$, where $v_m = 1/\mu_0$ is the so-called magnetic viscosity and σ the conductivity. As is shown, the analogy investigated here permits the variation of Re_m in a very wide range. For $Re_m \ll 1$, aerodynamic problems may be investigated, for $Re_m \rightarrow \infty$, problems of astrophysics. The authors investigate the fluid flow in an open channel with slowly changing width. Then, the continuity equation and the equation of motion are:

$$\frac{d \ln h}{dx} + \frac{d \ln u}{dx} + \frac{d \ln b}{dx} = 0, \quad (14)$$

$$\hbar u \frac{du}{dx} = -g h \frac{dh}{dx} + [juH]_z, \quad (15)$$

Card 4/6

Hydro-gas-analogy in ...

S/057/61/031/007/009/021
B104/3206

$b = b(x)$ being the channel width. By means of the Froude number
 $Fr = u/\sqrt{gh}$,

$$(Fr^2 - 1) \frac{d \ln u}{dx} = \frac{d \ln b}{dx} - \frac{1}{h_0^2} [J \mu H]_x \quad (16)$$

is obtained for the flow velocity and

$$(Fr^2 - 1) \frac{d \ln Fr^2}{dx} = 2 \cdot \left(1 - \frac{Fr^2}{2}\right) \frac{d \ln b}{dx} - \frac{3}{h_0^2} [J \mu H]_x \quad (17)$$

for the Froude number itself. These equations are analogous to those in ordinary gas dynamics and in magnetogasdynamics. They are discussed for $Re_m \ll 1$ and $Re_m \gg 1$. There are 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet im. S. M. Kirova Alma-Ata (Kazakh State University imeni S. M. Kirov, Alma-Ata)

Card 5/6

L 08527-62 EWP(m)/EWT(1) IJP(c) AT
ACC NR: AP6034579

SOURCE CODE: UR/0382/66/000/003/0045/0054

AUTHOR: Gusika, P. L.; Sukhov, G. S.

75
84
13

ORG: none

TITLE: Effect of ionization on the structure of a shock wave in a magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 3, 1966, 45-54

TOPIC TAGS: magnetogasdynamics, ionizing shock wave, thermal ionization, ionized plasma, shock wave structure, viscous flow, inviscid flow, dissipation

ABSTRACT: The structure of a one-dimensional magnetogasdynamic shock wave in a mono-atomic gas within a transverse magnetic field is analyzed, with thermal ionization taken into account. The analysis is based on the solution of a system of equations describing a one-dimensional magnetogasdynamic shock wave in a partially ionized perfect gas in a coordinate system moving with the shock front and to which the Saha equation is added. It is assumed that the time required to establish thermodynamic equilibrium is much smaller than the characteristic time of the problem and that temperatures and velocities of the oriented motions of electrons, ions, and neutral atoms across the shock wave front are equal. Thus, the analysis of the plasma motion is presented in a single-fluid approximation with no account taken of the Hall effect and ion slippage. The peculiarities of the shock-wave structure in electrically and heat conducting inviscid and viscous gases were considered with the

Card 1/2

UDC: 538.4

L 08527-67

ACC NR: AP6034579

the aid of the "law of inversion of effects" established by Vulis (Termodynamika gazovych potokov, M. Gosenergoisdat, 1950). The values of the degree of ionization and velocity behind the shock wave were obtained from a graphical solution of the corresponding equations. The results of numerical calculations of flow parameters behind the shock front in the ranges of gasdynamic free flow Mach number $M_{\infty 1}$ up to 25, nondimensional temperatures of a single ionization $\theta = 9.2$ to 18.2, and of the magnetic pressure parameter $\pi = 0.83$ to 83.3 are given in graphs and compared with those obtained without any ionization process. It is shown that considering ionization processes in magnetogasdynamics flows with shock waves leads not only to quantitative differences, but also to certain new qualitative effects such as variation of the critical velocity, anomalous behavior of the $\beta(M_{\infty 1})$ curve, etc. The author thanks Professor L. A. Vulis for his interest in the work and valuable advice. Orig. art. has: 4 figures and 18 formulas.

SUB CODE: 20/ SUBM DATE: 11Mar66/ ORIG REF: 009/ OTH REF: 004/
ATD PRESS: 5103

Card 2/2

L5

ACC NR: AP6034907

SOURCE CODE: UR/0382/66/000/002/0061/0072

AUTHOR: Vulis, L. A.; Gusika, P. L.; Kusainov, M. K.; Shmelev, Yu. K.;
Yaglenko, V. T.

ORG: none

TITLE: Mercury flow in a trough in a transverse magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 2, 1966, 61-72

TOPIC TAGS: transverse magnetic field, mercury, magnetogasdynamics,
magnetohydrodynamics, mercury flow, free surface flow

ABSTRACT: The article presents some results of systematic observations of a stationary flow of mercury in a horizontal trough, with insulated walls and electrodes in the presence of a transverse magnetic field. This method was found to be valuable in the study of magnetohydrodynamics and magnetogasdynamics phenomena. Qualitative characteristics were obtained on the structure of the hydraulic jump in the magnetic field and the influence of the latter on the intensity and location of the hydraulic jump in the range of values studied for the determin-

Card 1/2

UDC: 538.4

ACC NR: AP6034907

ing parameters. Experimental data for continuous subcritical and theoretical flows obtained in a one-dimensional approximation were compared, and qualitative characteristics obtained. Results of tests confirmed the qualitative deductions from the analysis of equations of reversal effects and the possibility of using an approximate computation based on a one-dimensional diagram. With a certain correlation of parameters, a practically smooth virtually jumpless transition from the supercritical to the subcritical flow was observed. Orig. art. has: 13 figures, 13 formulas. [GC]

SUB CODE: 11, 20, 09 / SUBM DATE: 31Jan66 / ORIG REF: 006 / OTH REF: 003 /

Card 2/2

GUSILEVSKI^Y, L. I.

Author: Gusilevskii, L. I.

Title: Constructor of aircraft. (Stroitel' samoletov.)

City: Moscow

Date: 1946

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 4, No. 1, p. 25

AKKERMAN, A.F.; GUSIKA, P.L.; KAIPOV, D.K.

Possibility of detecting a heavy-element impurity in a medium of
small atomic number with the aid of γ radiation. Trudy Inst. iad.
fiz. AN Kazakh. SSR 3:124-130 '60. (MIRA 13:10)
(Gamma rays)

GRIGORASH, M.; GUSINA, G., starshiy nauchnyy sotrudnik

New type of semiprocessed products: powdered vegetables. Obshchestv.
pit. no.9:36 S '63. (MIRA 16:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut konservnoy
promyshlennosti, Odessa.

2245 6.1. AID P - 4106

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 17/24

Authors : Kazak, N. A., V. Z. Bazyev, and G. A. Gusin, Engs.

Title : The need to expand the field of application of synchronous motors. (Discussion of the article by M. V. Greysukh, A. M. Rozental', and N. N. Stefanovich, this journal, No. 9, 1954).

Periodical : Elektrichestvo, 11, 80-82, N 1955

Abstract : The authors agree with the basic assumptions of the article by Greysukh and others, but have some objections as to the recommendations presented, and give their own recommendations. Three diagrams, 3 Soviet references (1954).

Institution : None

Submitted : No date

GRIGORASH, M.P.; GUSINA, G.B.

Technology of manufacturing powdered vegetables in spray-dryers.
Kons. i ov.prom. 17 no.4:18-21 Ap '62. (MIRA 15:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut konservnoy pro-
myshlennosti.
(Ukraine--Vegetables, Dried)

PA 67/49T82

GUSININ, I. A. Prof.

USSR/Medicine - Lymphangitis
Epizootic Diseases

May 49

"Treatment of Epizootic Lymphangitis in Horses With
Ranunculus Compounds," Prof I. A. Gusinin, Pharmacol
Lab, All-Union Inst of Experimental Vet Med, 4 pp

"Vet" No 5

Methods and apparatus for preparing Ranunculus
scleratus and R. acris are described. These prepa-
rations are effective local means of treating
lymphangitis and are inexpensive and simply pre-
pared. Proper feeding and care of the horse are
essential. Exact concentration and dosage still re-
quire study.

67/49T82

"APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R000617620010-8

GUSINSKAYA, B.S.

Effectiveness of multistage treatment of rheumatic fever in
children. Pediatris no.2:39-44 F '57.

(MIR 10:10)

1. Iz detskogo ob"yedineniya (nachal'nik - kandidat meditsinskikh
nauk F.I.Batnikov) Sverdlovskoy zhelezodorozhnoy bol'nitay.
(RHEUMATIC FEVER)

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R000617620010-8"

GUSINSKAYA, M.Sh.

Operation of the separation section of the Ertil' Factory.
Sakh. prom. 33 no.5:49-50 My '59. (MIRA 12:?)

1. Ertil'skiy sakhariny zavod.
(Ertil'--Sugar manufacture)

SIKIRYAVYY, A.G.; CHUMICHEV, A.S.; NIKOLAYEV, V.A.; TARANOVA, L.D.;
GUSINSKAYA, M.Sh.

Work of the separation plant of the Ertil' Sugar Factory. Sakh.
prom. no.4:21-23 Ap '60. (MIRA 13:8)

1. Direktor Ertil'skogo sakharного завода (for Sikiryavyy).
2. Glavnyy inzhener Ertil'skogo sakharного завода (for Chumichev).
3. Nachal'nik planovogo otdela Ertil'skogo sakharного завода (for Taranova).
4. Pomoshchnik starshego khimika po separatsii Ertil'skogo sakharного завода (for Gusinskaya).

(Ertil'—Sugar manufacture)